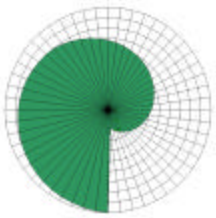

The Alberta GPI Accounts: Suicide

Report # 10

by

Mark Anielski

November 2001

Pembina Institute
for Appropriate Development

About the Pembina Institute

The Pembina Institute is an independent, citizen-based organization involved in environmental education, research, public policy development and corporate environmental management services. Its mandate is to research, develop, and promote policies and programs that lead to environmental protection, resource conservation, and environmentally sound and sustainable resource management. Incorporated in 1985, the Institute's main office is in Drayton Valley, Alberta with additional offices in Calgary and Ottawa, and research associates in Edmonton, Toronto, Saskatoon, Vancouver and other locations across Canada. The Institute's mission is to implement holistic and practical solutions for a sustainable world.

The Green Economics Program is dedicated to designing and implementing practical, street-smart economic tools that would reorient society back to the original meaning of the word "economy"—the care and management of the wealth of the household. By developing new tools for measuring the true wealth or well-being of nations, we can help guide Canadians and Albertans to a sustainable future.

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About this Report

This is one of 28 reports that provide the background for the Genuine Progress Indicators (GPI) System of Sustainable Well-being Accounts. It explains how we derived the index that was earlier published in *"Sustainability Trends 2000: The Genuine Progress Statement for Alberta, 1961 to 1999."* The research for this report was completed near the end of 2000. The appendices provide further background and explanation of our methodology; additional details can be obtained by contacting the authors. Appendix A includes a list of all GPI background reports.

The document examines the trends in suicide by Albertans between 1961 and 1999. Suicide is used as a measure of the mental health of Albertans as part of a suite of 22 societal and human health indicators in the Alberta GPI accounts. Suicide may or may not be a good indicator of the mental health of individuals, however, it does provide a reasonable proxy in the absence of a more robust accounting of mental health. The report identifies a trend of increasing numbers of suicide and a high incidence of suicide among men aged 10 to 49, particularly in Calgary. The report looks at the economic and social factors that contribute to the decision of individual men and women to attempt and commit suicide. Understanding what motivates individuals to contemplate and attempt suicide is a complex issue. GPI accounting considers suicide rates as a measure of human health and even a sign of healthy communities and social cohesion and so they are included in the accounting framework for measuring genuine well-being and progress. Estimated health costs related to suicide have also been considered as a regrettable social cost incorporated in the GPI net sustainable income estimates, as an adjustment to GDP (personal consumption expenditures).

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About the Author

Mark Anielski is Director of the Green Economics team, and has considerable experience in public policy analysis including natural resource, energy, royalty and fiscal policy issues in both the public (Alberta Government) and private (GPC – Government Policy Consultants) sector. He also serves as Senior Fellow to the U.S. economic policy think-tank Redefining Progress in Oakland, California and authored the 1999 U.S. GPI report with journalist Jonathan Rowe. He currently advises the National Round Table on Economy and the Environment's Sustainable Development Indicator Steering Committee on the development of indicators for measuring sustainability in Canada. Mark teaches business and the environment in the University of Alberta's School of Business. His expertise is varied and broad including accounting for sustainable development, natural resource accounting, public policy analysis, business planning and performance measurement. Mark pioneered the development of natural capital accounts for Alberta's timber, oil, gas, coal and other natural capital as well as having experience in the development of performance measurement systems, land use planning and non-market resource valuation, royalty policy analysis (forestry, oil and gas), and analysis of subsidies for both government and private forestry, energy and financial service industries. He holds a Masters degree in forest economics, plus bachelor degrees in economics and forestry.

Acknowledgements and Disclaimer

The author would like to thank Vanessa Bowman for her statistical analysis of suicide through the Support Network, and Calgary's Suicide Information and Education Centre for up-to-date suicide statistics. We also acknowledge the important historical Canadian suicide profile developed by Health Canada. The inquiry into suicide and measuring mental health in this report represents an initial step towards a more complete accounting of human health and well-being. Because GPI accounting is an iterative, inclusive and transparent well-being accounting system, we encourage others to add to the information and knowledge respecting suicide and other determinants of genuine well-being.

The high quality of the data compiled by Statistics Canada and the opportunity to use this data enabled us to undertake a much more thorough analysis than would otherwise have been possible. We also thank Kim Sanderson for her editing assistance. Finally, the Pembina Institute appreciates the vision of Western Economic Diversification in supporting this project—the first of its kind for Alberta, if not internationally.

The contents of this report are the responsibility of the Pembina Institute and do not necessarily reflect the views and opinions of those who are acknowledged above or the opinions or positions of Western Economic Diversification who helped fund the research.

We have made every effort to ensure the accuracy of the information contained in this document at the time of writing. However, the authors advise that they cannot guarantee that the information provided is complete or accurate and that any person relying on this publication does so at their own risk. Given the broad scope of the project and time constraints, it has not been possible to submit the entire report for peer review. The material should thus be viewed as preliminary and we welcome suggestions for improvements that can be incorporated in any later edition of the work.

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1. Executive Summary

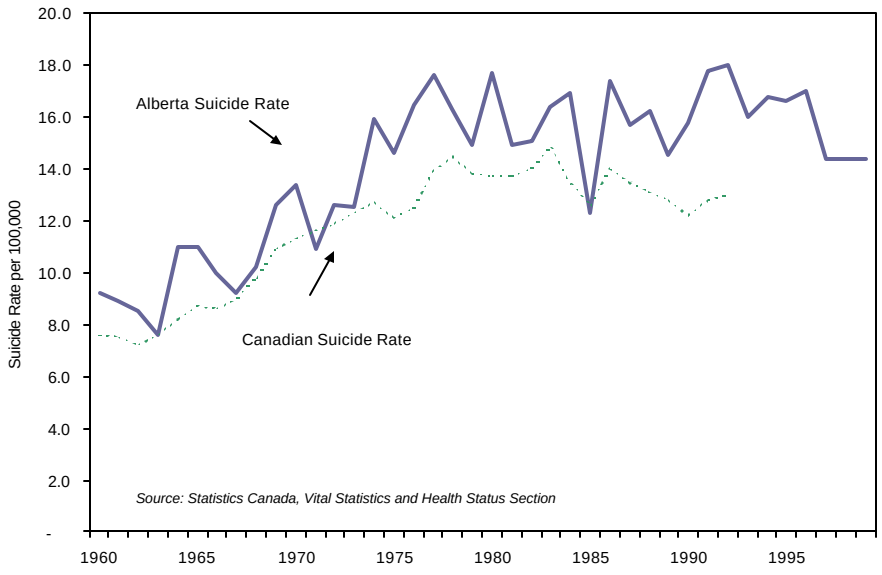
Suicide is a serious problem in Alberta and Canada, with some describing it as an epidemic. Alberta has the second highest suicide rate in Canada for both men and women. According to the Calgary Regional Health Authority, suicide is the leading cause of death for males aged 10 to 49, ahead of murder, traffic accidents, and all other causes of death. In 1999, an estimated 427 Albertans from all age groups committed suicide, compared with 82 suicides in 1950, 119 in 1960, 213 in 1970, 389 in 1980, and 403 in 1990.

The number of suicides per 100,000 population has risen since the 1950s and 1960s, from a low of 7.8 per 100,000 in 1953 to a high of 18.0 per 100,000 in 1992 (see figure below). In 1999, the estimated suicide rate was 14.4 per 100,000 population, an improvement over 1992 but still almost double the rates in the 1950s.

Noteworthy

- In 1999, an estimated 427 Alberta men and women committed suicide, compared with only 119 in 1961.
- The rate of successful suicides by Alberta men is roughly 3.7 times higher than for women; men tend to use guns more often.
- Women attempt suicide three times more often than men.
- According to the Calgary Regional Health Authority, suicide is the leading cause of death among Calgary males aged 10 to 49 years.
- For every successful suicide, there are an estimated 125 attempts.
- 260,500 Albertans and their families were affected by suicide in 1998.
- Suicide is most prevalent among the 35-50 year age group.
- Rate of suicide among Aboriginals is close to 45 per 100,000 population—three times the Alberta average.
- Alberta's suicide rate has averaged 117% of the Canadian average rate over 40 years.

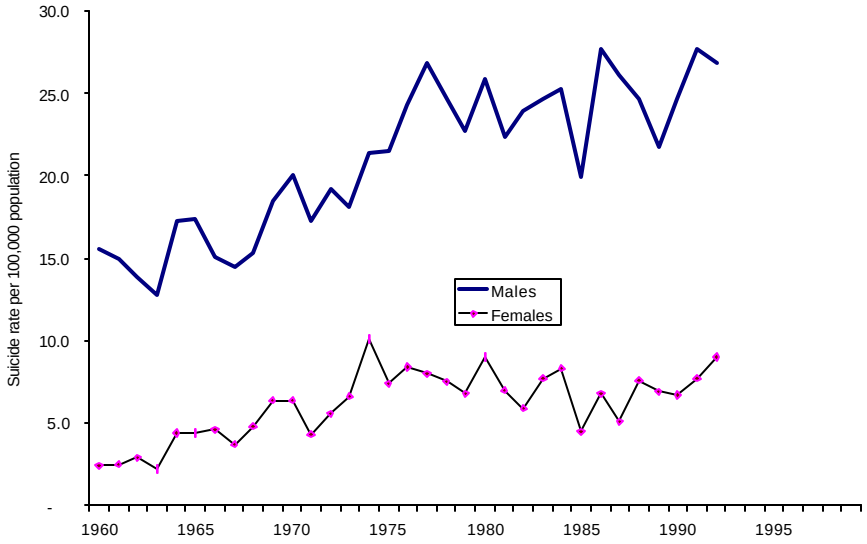
Suicide Rates: Alberta vs. Canada, 1961 to 1999



Source: Health Canada 1950-1992; 1995-1998 are from Office of Chief Medical Examiner, Alberta Justice

Typically more men kill themselves than do women; men are more successful since they tend to use firearms while women use less lethal options (see figure below). According to the Alberta Support Network, for every successful suicide in 1998 there were roughly 125 attempts.

Suicide Among Alberta Men and Women

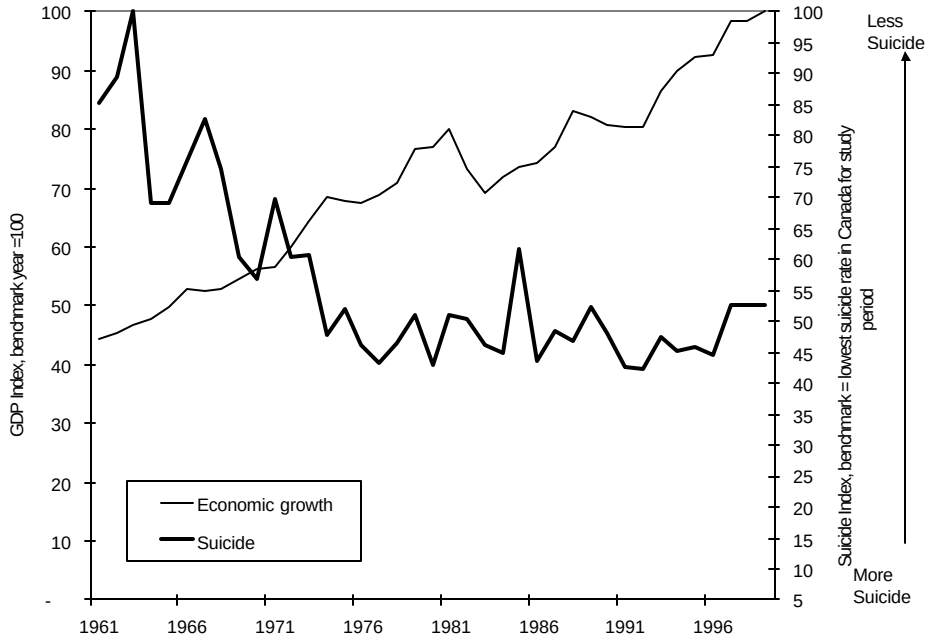


Source: Statistics Canada, Vital Statistics and Health Status Section

So What?

Suicide affects all of society by robbing a family, household or community of human lives as well as consuming resources and human energy in dealing with both attempted and successful suicide. The GPI Accounts consider suicide a regrettable action and a societal cost. The suicide index shows that while we have more economic prosperity than in the 1960s, we also have more suicide (see figure below). As an index, suicide in Alberta in 1999 scored 53 on a scale of 0 to 100, where 100 is the lowest suicide rate for men and women, a rate that occurred in 1963.

Alberta Suicide Index: Where are we today?



The reasons for suicide are complex and theories abound. Health Canada lists "the role of environmental influences and mental disorder, the existence and nature of predisposing genetic or biochemical factors, and the parallel issues of proper and effective treatment and prevention," noting that "suicide is an action; it is not an illness." How the socio-economic "cocktail" of impacts from financial stress, debt loads, a super-charged economy and marital breakdown affect suicide is not well understood, but we do know that Albertans feel the most financially vulnerable of all Canadians. Societal fragmentation, social isolation, media influences on self-worth, unemployment and environmental factors are additional determinants. Understanding the influences that lead to suicide presents one of the greatest challenges in health sciences and studies of mental illness. Paradoxically, the action of suicide both contributes to current GDP and detracts from future GDP. Based on a New Brunswick study, we estimate that the 427 suicides in 1999 would have direct costs (medical and other) to society of $2.4-million, plus indirect societal costs of $362.8-million in lost productivity, for a total of $365.2-million (1998$). This was equal to 0.33 percent of provincial GDP in 1999.

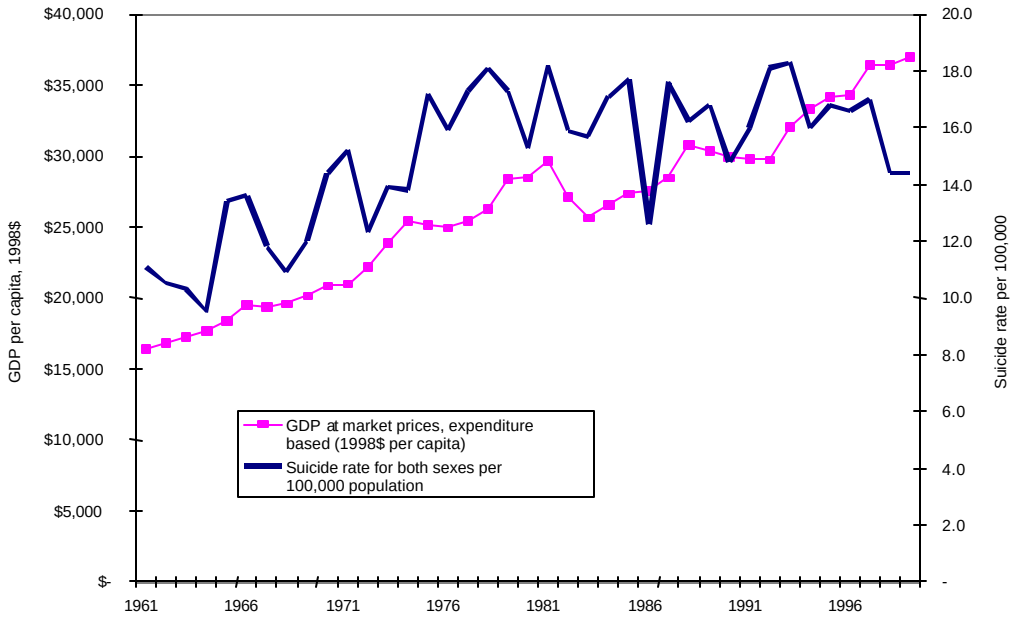
2. Suicide: A Health Crisis?

Suicide is a major health problem in Alberta and Canada. Alberta has the second highest suicide rate in Canada for both men and women. The 1987 National Task Force on Suicide in Canada found that between 1989 and 1992, the Northwest Territories had the highest male suicide rate, followed by Alberta, Quebec and Prince Edward Island. For females, the highest rates were in the Northwest Territories, Alberta, Quebec and British Columbia.

Suicide robs families, households and communities of human lives and consumes resources and human energy in dealing with both attempted and successful suicide. The economic costs to society from suicide are also significant. Ironically, these economic costs actually contribute to Alberta's rising GDP figures when intuitively we would deduct any expenditure related to suicide as a regrettable societal cost.

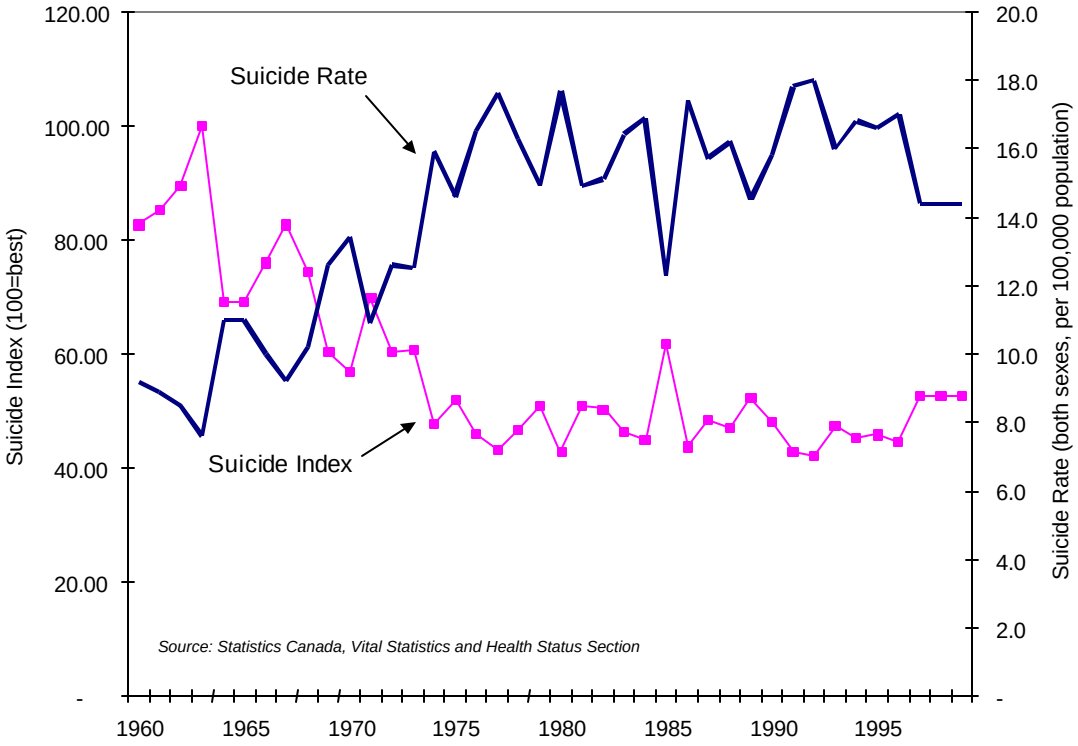
Suicide affects not only the extended family of the victim and the community, but also the police, the health care system and society as a whole. Suicide is a major social problem in Alberta and continues to be problematic despite improved economic well-being, as measured by the GDP. Figure 1 shows the trends in Alberta suicide against the Alberta GDP per capita (1998$) over time. The trend suggests that increasing economic growth and prosperity have come at a price of rising suicide rates.

Figure 1: Alberta Suicide Rate vs. GDP per capita (1998$)



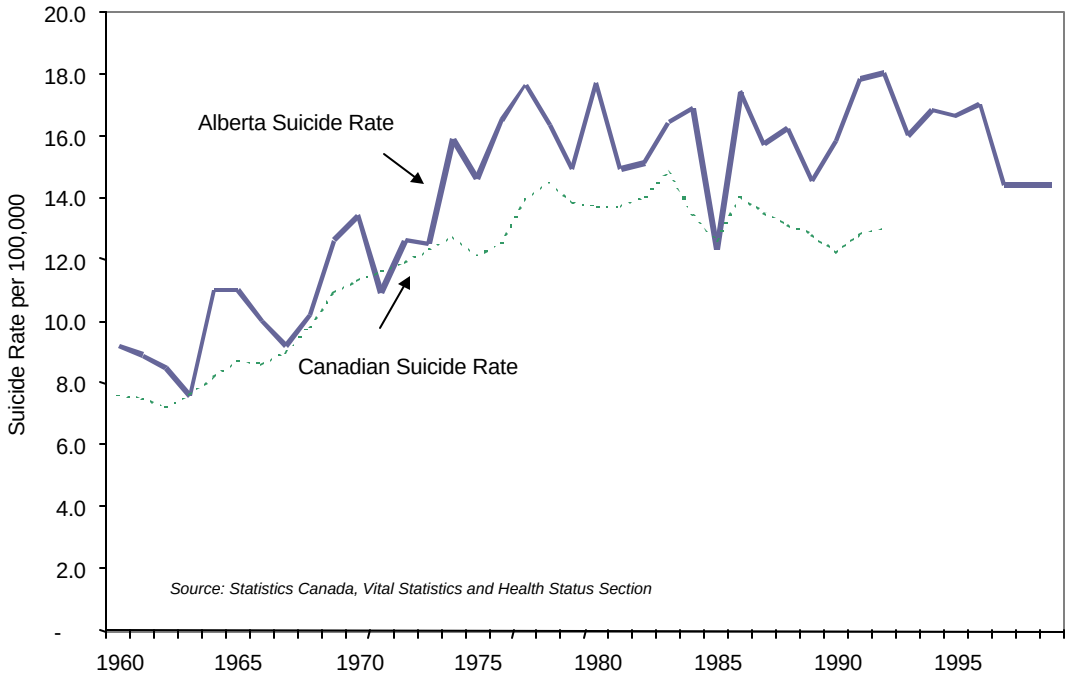
Based on a major 1994 study of suicide in Canada by Health Canada,[1] Alberta had one of the highest suicide rates in the country. In 1999, an estimated 427 men and women from all age groups committed suicide. This compares with 82 suicides in 1950, 119 in 1960, 213 in 1970, 389 in 1980, and 403 in 1990. The rate of suicides per 100,000 population has risen since the 1950s and 1960s (see Figure 2) from a low of 7.8 per 100,000 population in 1953 to a high of 18.3 per 100,000 in 1992. In 1999, the estimated suicide rate was 14.4 per 100,000 population, an improvement since 1992.

Figure 2: Alberta Suicide Rate (both sexes, per 100,000 population) and the GPI Suicide Index, 1960 to 1999



Alberta's suicide rate has historically been higher than the Canadian average as Figure 3 shows. Based on Health Canada's study of suicide the Canadian average suicide rate from 1960 to 1992 averaged 11.7 per 100,000 population (both sexes) compared with Alberta's average of 14.8 per 100,000 population, which was 27 percent higher than the Canadian average. Canadian suicide rates varied from a low of 7.2 per 100,000 in 1962 to a high of 14.8 per 100,000 in 1983 just after the recession. The lowest suicide rate in the country was recorded in Newfoundland at 1.6 per 100,000 population in 1969 and the highest was in Yukon at 93.9 per 100,000 in 1970.

Figure 3: Alberta Suicide Rates vs. Suicide Rates for Canada



Source: Health Canada 1950-1992; 1995-1998 are from Office of Chief Medical Examiner, Alberta Justice

Typically, men are more successful at committing suicide than women, using more violent means such as firearms; women are more likely to attempt suicide with pills and other less lethal means. Figure 4 compares suicide rates between Alberta men and women from 1960 to 1992 and shows that on average the rate of suicide for men is roughly 3.4 times higher than for women.

Figure 4: Alberta Suicide Rates Among Men and Women (All Ages), 1960 to 1992

While the suicide rates themselves are significant, they mask the full impact in terms of both attempted and successful suicide. The Support Network estimates that for every successful suicide there are roughly 125 attempted suicides.

The Support Network[2] has compiled the following statistics and other factual information on suicide for 1998:

- 417 Albertans committed suicide in 1998.
- 52,100 Albertans attempted suicide in 1998.
- 260,500 Albertans and their families were affected by suicide in 1998.
- Males complete suicide three times more often than women.
- Women attempt suicide three times more often than men.
- Suicide is most prevalent among the 35-50 year age group.
- In 1998, Alberta's suicide rate was 14.4 per 100,000 and in 1997 Canada's rate was 12.3 per 100,000.
- Aboriginal rate of suicide is close to 45 per 100,000 population, or more than three times the Alberta average.

The reasons for suicide are complex and there are many conflicting theories. As Health Canada's study notes "the role of the environmental influences and mental disorder, the existence and nature of predisposing genetic or biochemical factors, and the parallel issues of proper and effective treatment and prevention" all add up to an intricacy of factors affecting suicide. They also note that "suicide is an action; it is not an illness." Neurobiological, psychological, cultural and social factors can interact in complex ways to affect individuals. How the socio-economic

"cocktail" of impacts from financial stress,* debt loads, the high-speed economy and marital breakdown influences suicide is not well understood. Societal fragmentation, social isolation, media influences on self-worth, unemployment, and environmental impacts are additional determinants. Understanding the factors that lead to the action of suicide presents one of the greatest challenges in health sciences and studies of mental illness.

The National Task Force on Suicide in Canada conducted an extensive review of the current state and knowledge of suicide in 1987, which led to the construction of the first national database on suicide used in this Alberta GPI study. According to this national study, suicide ranks fourth among major causes of "potential years of life lost" for both sexes combined. In Alberta, suicide ranks after heart disease, stroke, cancer, respiratory disease and injuries as the major cause of death. The National Task Force also found that young Canadian men (20-29) and senior men (75+) were at high risk of suicide. This is also true of Alberta males with the rate of suicide highest among males 25-29 and 30-34 years of age, averaging 53 per 100,000 and 59 per 100,000 respectively in 1992. Since firearms are the preferred choice for men, access to firearms may be a concern for society.

3. Suicide Epidemic in Calgary

According to Calgary Regional Health Authority statistics, suicides are the leading cause of death for boys and men 10 to 49 years of age, ahead of murder, traffic accidents, and all other causes of death in this age group. Some would define this as an epidemic.[3] Calgary had 109 suicides in 1998, or 26 percent of total Alberta suicides; more than 80 percent of Calgary suicides were males. In Calgary, suicide ranks fifth behind medical causes of death, like heart disease and stroke. Suicide is as dominant among males as breast cancer is among females in this city. Boys and young men now kill themselves in numbers that are ten times higher than in the 1950s. These facts, released in March 2000, went mostly unnoticed in the media and public consciousness. As Gerry Harrington, director of Calgary's Suicide Information and Education Centre noted in the April 22, 2000 *Calgary Herald* article "Nobody's screaming about this…so far, we haven't faced the problem."[4] Despite the acknowledged high incidence of youth and young adult suicides in Alberta there is no formal provincial government program to deal with the problem. The reasons for suicide are complex, as noted, but the epidemic is paradoxical for a city like Calgary, which is at the centre of Alberta's economic success story, according to all traditional measures of financial success.

4. Suicide as an Index

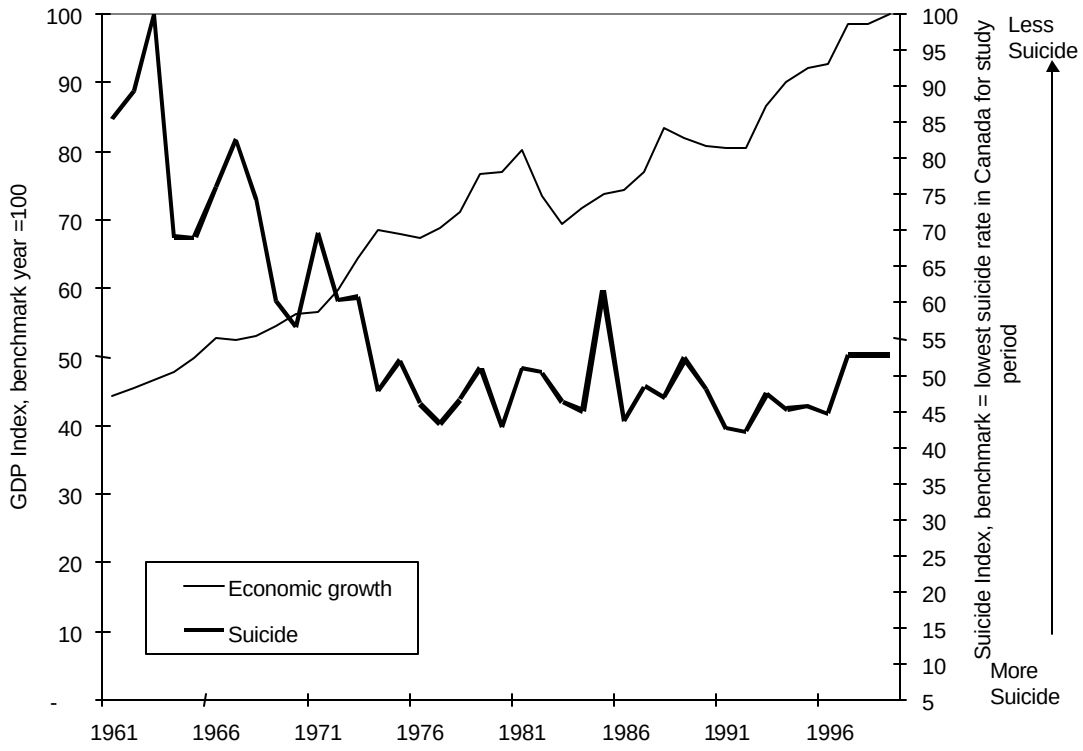
The GPI accounting system takes raw data and converts it to an index. This allows comparison with other indicators and aggregation with other indicators to create composite indices such as the Societal GPI Index (containing 22 social and human health indicators) and the aggregate GPI (containing all 51 indicators in the GPI accounts). The suicide index is based on actual suicide rate statistics per capita (see Appendix B). The combined suicide rate for both males and females is used to derive the suicide index. A benchmark year is chosen, which in this case is 1963, the year with the lowest suicide rate over the 40-year study period. The rate of suicide in 1963 is set to 100 points then the entire raw data time series is divided through by the 1963 suicide rate to

* Albertans feel the most financially vulnerable of all Canadians. See GPI Report #3 on "Money, Debt, Assets and Net Worth" for more details.

derive an index for suicides. We presume that lower suicide represents a more desirable social condition than higher suicides.

Indexing is useful for comparing suicide trends; for example, comparisons can be made with Genuine Progress Indicators or composite indices that would otherwise not be comparable. Figure 5 compares suicide rates with GDP over 40 years. As the figure indicates, suicide rates increased (which is reflected by a falling well-being index graph for suicide) until 1976 while GDP also increased. Since 1976, suicides have remained relatively high and constant while the GDP has continued to rise.

Figure 5: Suicide Index vs. GDP Economic Growth Index, Alberta 1961 to 1999



5. The Economic Cost of Suicide

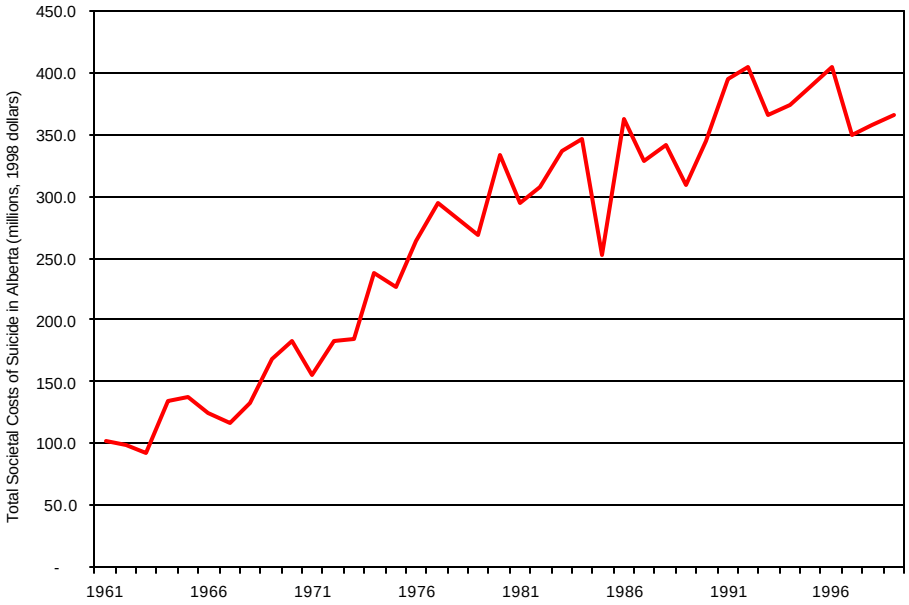
The GPI accounts also include an estimate of net sustainable income (or sustainable economic welfare) by estimating the full costs and benefits of consuming human, social, natural and produced capital in the process of generating economic output or GDP. GPI accounting yields a net sustainable income estimate, which is calculated by adjusting GDP (personal consumption expenditures) for these costs or benefits of social, human health and environmental capital depreciation. The GDP either ignores these costs or actually treats them as a net benefit to economic growth. Our GPI accounting approach is consistent with both the U.S. GPI[5] and Australian GPI[6] methodologies.

Estimating the full costs of suicide is unique to the Alberta GPI accounts. Neither the U.S. nor the Australian GPI estimates include these regrettable expenditures. Defining suicide in terms of monetary costs is undoubtedly controversial; however, we seek to illustrate the point that suicide and attempted suicides not only result in the loss (or potential loss) of human life but also medical, hospital, policing and other social service costs that are borne by all members of society.

One of the few studies of the economic costs of suicide was conducted by Dale Clayton and Alberto Barcelo for Health Canada with application to New Brunswick in 1996.[7] Based on an in-depth study of direct and indirect costs of suicide they found that the mean total cost per suicide death for New Brunswick in 1996 was $849,878. This figure comprised direct costs—actual dollar expenditures related to suicide death including ambulance services, hospital services, physician services, autopsy services, funeral/cremation services and policy investigations—which averaged $5,693 per suicide (94 were recorded). Indirect costs—the value of discounted future income or earnings based on potential years of life lost and a four percent discount rate—averaged $844,185 per suicide. The data used to develop these estimates came from an exhaustive assessment of actual expenditures in New Brunswick. No such study has been conducted for Alberta.

In the absence of Alberta statistics, we could estimate the societal cost of suicide to Alberta applying the New Brunswick figures as proxies. Applying the New Brunswick direct and indirect cost figures to Alberta suicide numbers gives us rough estimates of the total societal cost of suicide. Figure 6 shows that costs continue to rise with rising numbers of suicides, from an estimated $102-million in 1961 to $365-million in 1999. For purposes of adjusting the GDP figures we would only apply the estimates of the direct or actual expenditures related to suicide that range from $677-thousand in 1961 to $2,430-thousand in 1999, in constant 1998$ (see Appendix B). While relatively small at 0.002 percent of Alberta's GDP in 1999, they nevertheless represent a regrettable societal expenditure that is borne by all Albertans. Using total societal cost estimates, suicide costs are on the order of 0.5 percent of Alberta's GDP.

Figure 6: The Societal Cost of Suicide to Alberta



Source: Based on Clayton, Dale and Alberto Barcelo. 1999. "The Cost of Suicide Mortality in New Brunswick, 1996." Health Canada.

It is important to note that these costs are probably conservative since they do not consider the direct and indirect costs associated with attempted suicide. With ratios of 125 attempted suicides for each successful suicide, the direct and indirect costs are undoubtedly much higher.

Future GPI accounting projects should expand the inquiry into the total social costs of suicide in Alberta, given the significance to the well-being of our households and communities. This would require a careful examination of both public and private direct costs associated with suicide incurred by hospitals, physicians, ambulance services, autopsy services, funeral/cremation services, police investigations and counseling and suicide prevention services. All of these costs could be viewed as regrettable and thus deducted from Alberta's GDP. Extension of these estimates to include the indirect costs of forgone income benefits from suicide deaths and attempted suicide impacts could also be estimated for Alberta.

Appendix A. List of Alberta GPI Background Reports

A series of Alberta GPI background reports accompanies the *Alberta Sustainability Trends 2000* report and this report. These documents are being released in late 2001 and early 2002 and will be available on the Pembina Institute's website at www.pembina.org.

Alberta GPI Background Reports and Sustainability Indicators

GPI Background Reports	GPI Accounts Covered by Report
1. Economy, GDP, and Trade	• Economic growth (GDP) • Economic diversity • Trade
2. Personal Consumption Expenditures, Disposable Income and Savings	• Disposable income • Personal expenditures • Taxes • Savings rate
3. Money, Debt, Assets and Net Worth	• Household debt
4. Income Inequality, Poverty and Living Wages	• Income distribution • Poverty
5. Household and Public Infrastructure	• Public infrastructure • Household infrastructure
6. Employment	• Weekly wage rate • Unemployment • Underemployment
7. Transportation	• Transportation expenditures
8. Time Use	• Paid work time • Household work • Parenting and eldercare • Free time • Volunteerism • Commuting time
9. Human Health and Wellness	• Life expectancy • Premature mortality • Infant mortality • Obesity
10. Suicide	• Suicide
11. Substance Abuse; Alcohol, Drugs and Tobacco	• Drug use (youth)
12. Auto Crashes and Injuries	• Auto crashes
13. Family Breakdown	• Divorce
14. Crime	• Crime
15. Gambling	• Problem gambling
16. Democracy	• Voter participation
17. Intellectual Capital and Educational Attainment	• Educational attainment
18. Energy (Oil, Gas, Coal and Renewable)	• Oil and gas reserve life • Oilsands reserve life
19. Agriculture	• Agricultural sustainability
20. Forests	• Timber sustainability • Forest fragmentation
21. Parks and Wilderness	• Parks and wilderness

GPI Background Reports	GPI Accounts Covered by Report
22. Fish and Wildlife	• Fish and wildlife
23. Wetlands and Peatlands	• Wetlands • Peatlands
24. Water Resource and Quality	• Water quality
25. Energy Use Intensity, Greenhouse Gas Emissions and Air Quality	• Energy use intensity • Air quality-related emissions • Greenhouse gas emissions
26. Carbon Budget	• Carbon budget deficit
27. Municipal and Hazardous Waste	• Hazardous waste • Landfill waste
28. Ecological Footprint	• Ecological footprint

Appendix B. Alberta Suicide Data, Index and Estimated Cost of Suicide

Raw data for Alberta suicide, suicide index and the cost of suicide

	Suicide rate for both sexes per 100,000 population	Benchmark is lowest suicide rate in Alberta over study period, 1963=100.	Cost of Suicide (millions, 1998$)
1961	8.9	85.39	0.68
1962	8.5	89.41	0.66
1963	7.6	100.00	0.61
1964	11.0	69.09	0.89
1965	11.0	69.09	0.91
1966	10.0	76.00	0.83
1967	9.2	82.61	0.78
1968	10.2	74.51	0.88
1969	12.6	60.32	1.12
1970	13.4	56.72	1.21
1971	10.9	69.72	1.04
1972	12.6	60.32	1.22
1973	12.5	60.80	1.23
1974	15.9	47.80	1.59
1975	14.6	52.05	1.51
1976	16.5	46.06	1.76
1977	17.6	43.18	1.96
1978	16.3	46.63	1.88
1979	14.9	51.01	1.79
1980	17.7	42.94	2.21
1981	14.9	51.01	1.96
1982	15.1	50.33	2.04
1983	16.4	46.34	2.24
1984	16.9	44.97	2.31
1985	12.3	61.79	1.69
1986	17.4	43.68	2.41
1987	15.7	48.41	2.19
1988	16.2	46.91	2.28
1989	14.5	52.41	2.06
1990	15.8	48.10	2.29
1991	17.8	42.70	2.63
1992	18.0	42.22	2.69
1993	16.0	47.50	2.43
1994	16.8	45.24	2.49
1995	16.6	45.78	2.59
1996	17.0	44.71	2.69
1997	14.4	52.78	2.33
1998	*14.4*	52.78	2.38
1999	*14.4*	52.78	2.43

Note: Suicide figures for 1998 and 1999 are estimated and assumed to be the same as 1997 rates. Future GPI accounts should update these figures according to the most recent data from the Office of the Chief Medical Officer, Alberta Justice or Health Canada.

Endnotes

[1] Health Canada. 1994. "Suicide in Canada: Update of the Report of the Task Force on Suicide in Canada." Mental Health Division, Health Services Directorate, Health Programs and Services Branch, Health Canada.
[2] The Support Network, Vanessa Bowman, phone: 780-482-0198
[3] "Suicide in Alberta" www.crosswinds.net/~fathersforlife/altasuic.htm and "Suicide leads death causes for males 10-49 years" by Joe Woodard, *Calgary Herald*, April 22, 2000, p. B6
[4] "Suicide in Alberta" www.crosswinds.net/~fathersforlife/altasuic.htm and "Suicide leads death causes for males 10-49 years" by Joe Woodard, *Calgary Herald*, April 22, 2000, p. B6
[5] Anielski, Mark and Jonathan Rowe. 1999. *The Genuine Progress Indicator – 1998 Update*. Redefining Progress, San Francisco. March 1999. http://www.rprogress.org/pubs/pdf/gpi1998_data.pdf
[6] Hamilton, C. and R. Denniss. 2000. *Tracking Well-being in Australia, The Genuine Progress Indicator 2000*. The Australia Institute. Number 35. December 2000.
[7] Clayton, Dale and Alberto Barcelo. 1999. "The Cost of Suicide Mortality in New Brunswick, 1996." Health Canada. www.hc-sc.gc.ca/hpb/lcdc/publicat/cdic/cdic202/cd202e_e.html